

INTRODUCTION TO TACTICS

SROC - 22 JUNE 1973

Good afternoon, gentlemen. This marks your entry into the final trimester of your 8 day exposure to the Naval Warfare curriculum. I hope you are getting an understanding of what our senior students have covered this year and that this has whetted your appetite for the new correspondence courses we will be offering this fall.

When you hear of Naval Tactics, you normally think of the doctrine associated with operating today's ships and aircraft. There are so many sorts of platforms and systems today that we couldn't possibly cover each of them. Furthermore, if we took the time here to brief the students in detail on how each platform versus platform interaction takes place today, what would they do ten years from now when today's platforms, both ours and theirs, may be obsolete? What we have done is to continue the principle used in Strategy. We force the student to look behind the status quo and determine verities that transcend contemporary systems and procedures.

Why study tactics at all? Where does this course fit in? First of all, this is still the Naval War College. Other schools may teach Strategy, from an international relations if not from a naval point of view. Many colleges specialize in Management of one brand or another. We could as our critics point out, obtain some training for our officers elsewhere. No other institute for higher learning, however,

even approaches military Tactics at a graduate level. If naval officers are to be inspired to be tacticians in the future, they must comprehend the basic principles of weapons systems and the interactions of encounter, detection and target prosecution. This can only be done here. Otherwise, we must go on relying upon civilian think-tanks to do all our tactical development.

WHY TACTICS IMPORTANT

SIX REASONS

Slide 1 1. Obvious to you many management decisions based on tactical assumptions.

 e.g. SCS study

 e.g. NARAC-G-ATLANTIS

 Tight vs open convoys

 DD's vs SES/helos/bouys

Most management decisions presume new future tactics.

Disasters from extrapolating current tactics.

Again Why our emphasis not on tactics of today

 deriving future tactics

 More later

2. Standard procedures/doctrine less useful guides

- two reasons:

Impact of technology and political restrictions

Flip 1

A. Technology first:

Slide 2

1. Changes in own and enemy capabilities

e.g. Foxbat

Proliferation

2. More alternatives

Slide 3

Nelson - lay alongside

E.G. DD's vs long range contact

e.g. Task Group mix

Slide 4

B. Political restrictions - rules of

engagement superimposed .

e.g. Bombing 19th parallel

Flip 2

3. Fascination with technology

Hardware solutions

D.C.

Only tactics will help today

Superior tactics only hope of offsetting

quantitative and qualitative superiority

Slide 5

New York Times

Flip 3

4. Navy lacks capability to develop tactics

My experience as TG CDR/as Systems Analyst

No one working on it.

Fleets too busy.

OPNAV/NAVMAT - hardware/\$

Peacetime training can be misleading

e.g. DD - slow speed SHOBOM

Recent reorganization

Fine - but will require people capable of
developing tactics.

Not just following book

Our task - provide input

Teach how to derive tactics

Not to do it

Flip 4

5. Complexity of naval missions

Missile ship

Mini-ABM

ASW

C&C for A/C

Communications complex

Flip 5

6. Navy blackshoe - brownshoe syndrome

Lack understanding driving management decisions

Lack understanding hurts tactics

e.g. Vinh incident

Not a Navy man in room including myself here
that does not have a lot to learn

How approach tactics?

Slide 6

Divide into two worlds

6A Derivation similar management -Execution

Flip 1 Definitions

This course treats execution only peripherally

Now MEAT

How derive tactical alternatives and compare
for decision

Two steps:

1. Understand fundamentals

Sensors

Flip 2 Weapons

Platforms

2. Lay out logic process

See alternatives

Fundamentals - list

Slide 7 Not MK/Mods

Slide 8 Principles - sonar

Flip Laws physics

Weapons

Flip 1 e.g. Guns vs missile

Slide 9 Platforms - characteristics affect performance
weapons/sensors

Flip 2 e.g. Difference in a radar in satellite and ships

Sensor/Weapons capabilities absolutely
dominate tactics

My experience operational people do not
understand
e.g. Rowan

How apply fundamentals in logic flow

Slide 10 Study components of tactical engagement

P X P X P
D FC A
.....
offense or defense

I'll show few examples of logic displays

No standard way -

Logic display means taking theoretical
knowledge of fundamentals and displaying
so can apply to a decision process

Alternatives

Factors driving problem

- Slide 11
1. Driving factors - sub search plan
 2. Sub attack procedures alternative consequences

Flip See consequences of results of search plan

If detect -

Slide 12

Classify
Position
Attack

Flip 1 If counterdetected

Note: If ignore due improper classifica-

1-2 Different if no detection
 Alternative consequences
 Show - must be capable of all steps
 Understand fundamentals - sensors
 weapons & platform
 Chain - weakest link

Slide 13 4. ASM
 Geometry display
 Recognize fundamental limits of detection
 Note radar - alert operator 30-23 miles

Flip 1 E-2
2 3 scopes
3 Still no way to connect to Terrier
 Could

Slide 14 One benefit - feedback of good tactical
 analysis is R&D and hardware suggestions

Flip 1 Graf Spree

 Could use other displays

 Time line

 Graph

 End result is a decision

 Not right/wrong tactics - probabilities

Slide 15 Probabilities

How derive?

Look at all components

Estimate probabilities with ops analysis

Insert estimates

Identify sensitivities (radar warning)

Identify interferences (speed)

Identify conditions that different

alternatives become preferred

Forces

Pol constraints

Enemy

Decision

Art or Science

Both

Systematic approach

Intuition - guess - estimates

on non-quantifiable only

Educated

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fleet armed with anti-ship missiles which can be fired while submerged. Then, on Monday afternoon you'll have a chance to see the result of some of this innovation. The UPTIDE series of exercises which address protecting of our surface forces from submarines. We're always looking for ideas. There may be analogous problems in your various backgrounds which you have seen solved and which might very well flood this whole tactical area in a new light. Don't be shy. Thirty years ago, when a physicist first convinced our planners that torpedo shooting and area search both could be modeled as Brownian motion from gas theory, it opened up a whole new world.

Good luck.

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When you hear of Naval Tactics, you normally think of the doctrine associated with operating today's ships and aircraft. How do you take on a "Charlie-Class" with a DE or with a P-3, ^E an S-3, or with an SSN? What if the target is an enemy surface ship? An aircraft? The permutations and combinations go on and on. We couldn't possibly cover each of them. Furthermore, if we took the time here to brief the students on how each of these platform versus platform interactions take place today, what would they do ten years from now when today's platforms, both ours and theirs, may be obsolete? What we have done is continue the principle used in Strategy. We force the student to look behind the status quo and determine verities that transcend contemporary systems and procedures. ~~They are~~ familiarized with today's hardware, only to the extent that we must to acquaint our "throttle jockeys" with the black shoe world and to get the submariners eyes above keel depth.

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~~SECRET~~
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Not MKS/Mods

Slide 8

Principals

IPS
sonar

FLIP 1

Laws physics

Weapons

Flip 1

e.g. Gun vs missile

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Platforms - characteristics affect performance weapons/sensors

Flip 2

e.g. Difference in a radar in satellite and ships

Sensor/Weapons capabilities absolutely dominate tactics

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Slide 10

Study components of tactical engagement

$$P_D \times P_{FC} \times P_A$$

offense or defense

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Show - must be capable of all steps

Understand fundamentals - sensors - weapons
& platform

Chain - weakest link

Slide 13

4. ASM

Geometry display

Recognize fundamental limits of detection

Note radar - alert operator 30-23 miles

Flip 1

E-2

2

3 scopes

3

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Could

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Graf Spee

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Pol Pol constraints

enemy

Decision

Art or Science

Both

Systematic approach

Intuition - guess - estimates

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Educated

Summary

1. TG CDR
2. Emphasis on detailed step-by-step analysis
Not cookie cutter
3. Emphasis on derivation vs execution
4. Emphasis on logic process not hardware/doctrine
5. Graduate program

Derive formulas

Start fundamentals

You're receiving a very meaty portion of this course. You'll have a chance to discuss the DE vs SSN interaction in some detail. This, combined with the ASMD study which you have on Monday reflects one of the toughest problems facing our tactical innovations today: the Soviet's extensive nuclear submarine fleet armed with anti-ship missiles which can be fired while submerged. Then, on Monday afternoon, you'll have a chance to see the result of some of this innovation! The UPTIDE series of exercises which address protection of our surface forces from their submarines. We're always looking for ideas. There may be analogous problems in your various backgrounds which you have seen solved and which might very well flood this whole tactical area in a new light. Don't be shy. Thirty years ago, when a physicist first convinced our planners that torpedo shooting and area search could both be modeled as Brownian motion from gas theory, it opened ^{up} a whole new world.

Good luck.

*Must be used - Refused Approach tactics
Nelson - with JGE*

Also playing for long run

No intent send you away - abreast current Navy tactics
and equipment.

^{1/31}
~~If~~ prep school next tour duty - would want to know
~~MK-16 Mod 3 gidget capabilities - but with~~
~~span of specialities task.~~

At same time can't get away from current
capabilities altogether.

①

But - make one point clear side benefit only

No intent provide detailed descriptions

Current procedures/equipment

You - warp course all out shape - if insist drive discussion
into details - capabilities - characteristics - new versions.

If Course any value must stand test of time.

Good for students 2-3 years from now.

So concerned - seriously considered freezing

US and enemy data 1970

②

Why Tactics Important? - Why Included?

1. Obvious to you many management decisions based on tactical assumptions.

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e.g. NARAC-G - Atlantis

Tight vs open convoys

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Most management decisions presume new future tactics.

Disasters from extrapolating current tactics.

After Why our emphasis not on tactics -
deriving future tactics

More later

2. Standard procedures/doctrine less useful *guides* - two reasons:

Impact of technology and political restrictions

A. Technology: *cut*

1. Changes in own and enemy capabilities

e.g. Foxbat

2. *collected* More alternatives

Nelson - lay alongside

e.g. DD's vs long range contact

e.g. Task Group mix

- B. Political restrictions - rules of engagement
superimposed.

e.g. Bombing 19th parallel

3. Fascination with technology

Hardware solutions

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New York Times

5R

⑤

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Our task - provide input

Teach how to derive tactics

Not to do it

1-3

⑥

5. Complexity of naval missions

Missile ship

Mini-ABM

ASW

C&C for A/C

Communications complex

Amphib assault

CAS

Troop maneuver

Helo - Boat landings

ASW/AAW defense

More problems bringing together tactical capabilities -
one time.

⑦

6. Navy black shoe - brown shoe syndrome

Lack understanding driving management decisions

Lack understanding hurts tactics

e.g. Vinh incident

e.g. CVA-ASW

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⑧

How approach tactics?

Divide into two worlds

Derivation - Execution

This course treats execution only peripherally

Similar to
Tactical
1 Covered elsewhere
2 the previous CTS
as

6LH
Revised

+

6R

6L-1

(9)

Now meat

~~How derive tactical alternatives and compare for decision~~

Two steps:

1. Understand fundamentals

Sensors

Weapons

Plat forms

2. Lay out logic process

See alternatives

- 6L-2

Flip

(10)

Fundamentals - List

Sensors

e.g. CZ

*Not 1/10/3/6
- 8R
- Low P. figures*

7L

(11)

Weapons

e.g. Gun vs missile

Platforms - characteristics affect performance weapons/sensors

e.g. Difference in a radar in satellite and ships

Sensor/Weapons capabilities absolutely dominate
tactics

My experience operational people do not understand

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*7L-1
9R
7L-2*

(12)

Handwritten: Research question: What is the plan?

Study components of tactical engagement

$P_D \times P_{FC} \times P_A$

Offense or defense

Examples of logic displays

No standard way -

Logic display means taking theoretical knowledge of fundamentals and displaying so can apply to a decision process

*Handwritten: Alternatives
Factors during problem*

*Handwritten: 62
Redone
1
at
102
~~111~~*

(13)

11R

11R-1

*Handwritten: 12R
+kill
12-1
12-2*

- Handwritten: 1. Sub attack - sub search plan*
2. Sub attack procedures

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Alternative consequences

Show - must be capable of all steps

Understand fundamentals - sensors - weapons & platform

Chain - weakest link

(14)

13R

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E-2

3 scopes

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GRAF Spee

14R (15)

Target selection

Easier decoy

Relay -

Platform vulnerable

Could use other displays

Time line

Graph

Hope you'll invent some

~~Point - take sub elements of tactical process~~

(16)

23

1.5 R

How derive?

Estimate probabilities with ops analysis

Identify sensitivities

Identify interferences

Identify conditions that different alternatives

become preferred

Aug 11
Vol. 100
100

Neither

Systematic approach

Intuition - guess - estimates
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18

Summary

Definitions

- 1 *TG. Ch*
- 2 Emphasis on detailed step-by-step analysis
Not cookie cutter
- 3 Emphasis on derivation vs execution
- 4 Emphasis on logic process not hardware/doctrine - *do not*
- 5 Graduate program
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VS NVN @ 25 KT
*Ne. OpNav
+ fleet orgn*

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*as Kennedy + sub hunt
med*
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Good luck.

Speech
File

INTRODUCTION TO TACTICS

Here we are starting the next to last section of your War College course. The Tactics curriculum, I think, will be as exciting or more so than anything you have had thus far. Why, though, are we converging Tactics and how do we intend that it differ from the standard "operations" courses in all of the War Colleges?

To answer that question, I would like to start by looking back at where we have been in Strategy and Management to place Tactics in perspective. In Strategy we started in the depths of antiquity, 2400 years ago. We never let you set your sights on anything more recent than 1945. An alternative, of course, would have been to have studied current strategic concepts and problems. We did not do this because we are playing for bigger stakes than just today or the immediate tomorrow. The problems of today's strategy will likely not be the problems of the day after tomorrow. Look, for instance, at all your predecessors here who studied the strategy of a bi-polar confrontation. What we have endeavored to show is that the bi-polar world of Athens and Sparta was a very real thing to them, just as much as it was to ourselves and the Soviet Union for a quarter of a century, but that in the long run, bi-polar periods have been aberrations in history. It is our hope that this leaves you with a flexibility of mind to view either a bi-polar or multi-polar focus, however the world develops in the next decade.

That an understanding of past strategy is appropriate to being knowledgeable about today's was brought home to me last Sunday. I read the article on Vietnam in the New York Times magazine section by former Assistant Secretary of State George Ball. In one portion he said: "The United States ignored the time-honored practice-habitually followed by the dynastic states of Europe for which limited war was a way of life - that such contests should be fought only with professional armies or hired mercenaries. The concept of the "nation-in-arms" did not really emerge until the French Revolution, when, having seized the state from the dynasts, the people swarmed to its defense, with vast armies created by a levée en masse and driven by the ideological fervor of a fanatical nationalism. They fought truly total wars in which the whole society engaged." Now I know that these terms, limited war, levée en masse, ideological war, nationalism, total war, all have new meanings for me since last fall's seminars. I am confident from listening to you flip them around in your seminars that they do for you, too.

By deemphasizing the present, and acquainting you with some of the considerations that decision makers used in the past, we are pointing you toward making decisions in the future. Those decisions will not be based on the particular considerations that are au courant today. They will be based on a mix

of some of the concepts we are using today, some of those that Pericles employed, some of Bismack's, and others that we have either not covered or which will be unique when they develop. Hopefully this emphasis on the uncertainty of strategic factors will prepare you for the very uncertain world in which you will be making critical strategic decisions five, ten, and fifteen years from now. I hope that it will be more useful to you than would a detailed familiarity with the policies of 1974 - 75 which you probably can not influence appreciably.

Next, as we moved into Management we threw you abruptly from the broad uncertain world of strategic considerations into a \$270 billion national budget. Note carefully that this budget you considered was ripe, but not yet rotten. The Congress had already rendered its decisions on the President's request, and by coincidence the next budget was only a few weeks away. This coincidence was, perhaps, an ideal compromise. In many ways I would have preferred to have given you an old budget that you could slice up as clinically as a biology student does his frog, rather than one in which you have an interest akin to a surgeon and his patient. Still, it seems a shame to deprive you of factual data and familiarity with current concerns that could be side benefits to the analysis of budget procedures and alternatives. In addition, the historical approach in Management appears somewhat less relevant than in

Strategy. After all, had we taken a purely historical look at management procedures we might never have introduced you to the exciting world of linear programming, discounting, probability, and other systems analysis skulduggery.

Again, in Management our emphasis^s was on the long term benefits. We were betting that each of you have more than two or three years of high productivity remaining in your military careers. We are betting that you will deal with the Management problem of the F-19 not the F-14. When one of you defends it before Congress in 1979 you'll probably discover a new principle, a single fighter that can serve from both aircraft carriers and land bases.

Seriously, I am confident, from the way one of you gored that unsuspecting captain on the PF panel about opportunity costs, and the way you handled your case studies and your questions in seminars to the industry bureaucracy and Congressional people, that you will be tougher advocates and defenders when you go before Congress or your Chief of Service or wherever.

1. Obvious to you many management decisions based on tactical assumptions.

e.g. SCS study

e.g. NARAC-G - Atlantis

Tight vs open convoys

DD's vs SES/helos/buoys

Most management decisions presume new future tactics.

Disasters from extrapolating current tactics.

Why our emphasis not on tactics -

deriving future tactics

More later

2. Standard procedures/doctrine less useful - two reasons:

Impact of technology and political restrictions

A. Technology:

1. Changes in own and enemy capabilities

e.g. Foxbat

2. More alternatives

Nelson -- lay alongside

e.g. DD's vs long range contact

e.g. Task Group mix

- B. Political restrictions - rules of engagement superimposed.

e.g. Bombing 19th parallel

3. Fascination with technology

Hardware solutions

D.C.

Only tactics will help today

Superior tactics only hope of offsetting quantitative
and qualitative superiority

New York Times

4. Navy lacks capability to develop tactics

My experience as TG CDR/as Systems Analyst

No one working on it.

Fleets too busy.

OPNAV/NAVMAT - hardware/\$

Peacetime training can be misleading

e.g. DD - slow speed ~~SHOBBAM~~

Recent reorganization

Fine - but will require people capable of
developing tactics.

Not just following book

Our task - provide input

Teach how to derive tactics

5. Complexity of naval missions

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Missile ship

Mini-ABM

ASW

C&C for A/C

Communications complex

Amphib assault

CAS

Troop maneuver

Helo - Boat landings

ASW/AAW defense

More problems bringing together tactical capabilities -
one time.

6. Navy black shoe - brown shoe syndrome

Lack understanding driving management decisions

Lack understanding hurts tactics

e.g. Vinh incident

e.g. CVA-ASW

Not a Navy man here that does not have a lot to learn.

7. Must think ahead - not past

Study of doctrine leads back

Tactics - ahead

Also playing for long run

No intent send you away - abreast current Navy tactics
and equipment.

If prep school next tour duty - would want to know
MK 16 Mod 3 ^agadget capabilities - but with
span of specialities task.

At same time can't get away from current
capabilities altogether.

But - make one point clear side benefit only

No intent provide detailed descriptions

Current procedures/equipment

You - warp course all out shape - if insist drive discussion
into details - capabilities - characteristics - new versions.

If Course any value must stand test of time.

Good for students 2-3 years from now.

So concerned - seriously considered freezing

US and enemy data 1970

What are attempting thought process developing tactics

Same as Management

Analyze Problem

Set objectives

Establish criteria

Explore alternatives

Make Compare

Decisions

Make choices

How approach tactics?

Divide into two worlds

Derivation - Execution

This course treats execution only peripherally

Now meat

How derive tactical alternatives and compare for decision

Two steps:

1. Understand fundamentals

Sensors

Weapons

Plat forms

2. Lay out logic process

See alternatives

Fundamentals - List

Sensors

e.g. CZ

Weapons

e.g. Gun vs missile

Platforms - characteristics affect performance weapons/sensors

e.g. Difference in a radar in satellite and ships

Sensor/Weapons capabilities absolutely dominate
tactics

My experience operational people do not understand

e.g. Rowan

How apply fundamentals in logic flow process.

Study components of tactical engagement

$$P_D \times P_{FC} \times P_A$$

Offense or defense

Examples of logic displays

No standard way -

Logic display means taking theoretical knowledge of
fundamentals and displaying so can apply to a
decision process

2. Sub attack procedures

See consequences of results of search plan

If detect -

Classify

Position

Attack

If counter detected

Note: If ignore due improper classification -
may be subjected counter detection

Different if no detection

Alternative consequences

Show - must be capable of all steps

Understand fundamentals - sensors - weapons & platform

Chain - weakest link

3. DECM

1. Tells conditions for entering ball game

Subsequent sequential steps

4. ASM

Geometry display

Recognize fundamental limits of detection

Note radar - alert operator 30-23 miles

E-2

3 scopes

Still no way to connect to Terrier

Could

One benefit - feedback of good tactical
analysis is R&D and hardware suggestions

5. NUC (need name of anti-tank missile)

Sometimes too complex to draw alternatives

Want check list of things to consider

John Keeley's example

6. ASM Defense

Comparative requirements.

External guidance

Exposes to ECM

Want know signal characteristics

Intelligence feedback

Exposes to DECM

Active search

Same

Plus may need altitude

Target selection

Easier decoy

Relay -

Platform vulnerable

Could use other displays

Time line

Graph

Hope you'll invent some

Point - take sub elements of tactical process

End result is a decision

Not right/wrong tactics - probabilities

92

Probabilities

How derive?

Look at all components.

Estimate probabilities with ops analysis

Insert estimates

Identify sensitivities

Identify interferences

Identify conditions that different alternatives
become preferred

Decision

Art of Science

Neither

Systematic approach

Intuition - guess - estimates

Definitions

Emphasis on detailed step-by-step analysis

Not cookie cutter

Emphasis on derivation vs execution

Emphasis on logic process not hardware/doctrine

Graduate program

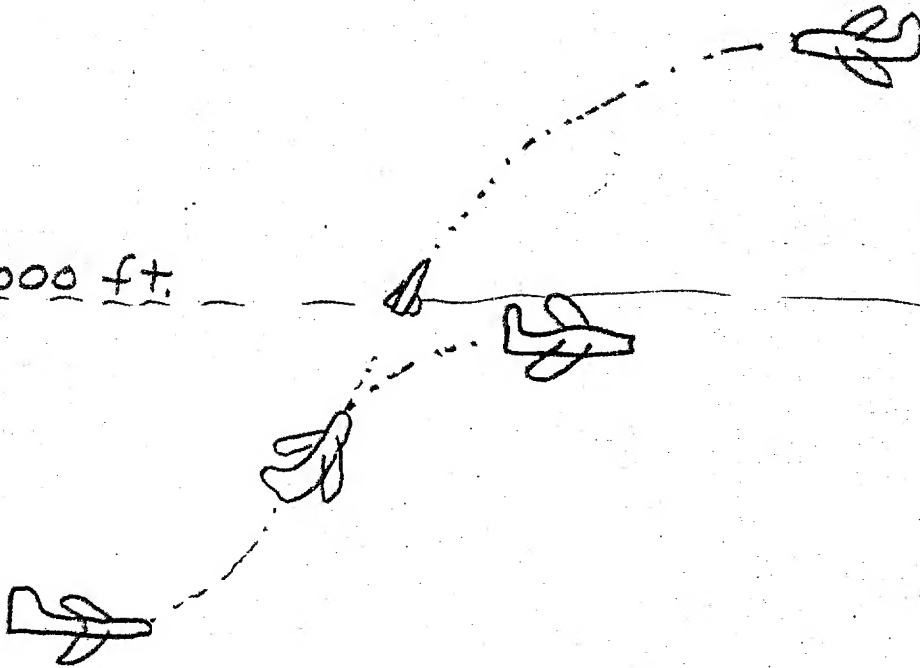
Derive formulas

Start fundamentals

6 Cdr

MIG-25: 73,000 ft.

F-14: 61,000 ft.



— Flip

SECRET

SLIDE 19

COMPARATIVE REQUIREMENTS DISPLAY (ASM DEFENSE)

ANTI-MISSILE SYSTEM

TARGET ALTITUDE/COMPOSITION
RADAR ALTITUDE
TARGET EMISSIONS

ANTI-SHIP MISSILE SYSTEM

EXTERNAL GUIDANCE
PRE-PROGRAMMED FLIGHT
ACTIVE SEARCH/HOMING

TIME
COMPUTER ACCURACY
EVASION

INTERNAL SELECTION

RADIO RELAY TO
LAUNCHER

DECM
DECAYS
MISSILES
GP GUNS
CIWS

WARHEAD SIZE
FUZING

SLIDE 1

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TACTICS PROCESS

ANALYZE THE PROBLEM

OBJECTIVES

CRITERIA

ALTERNATIVES

COMPARISONS

DECISION

ELIP

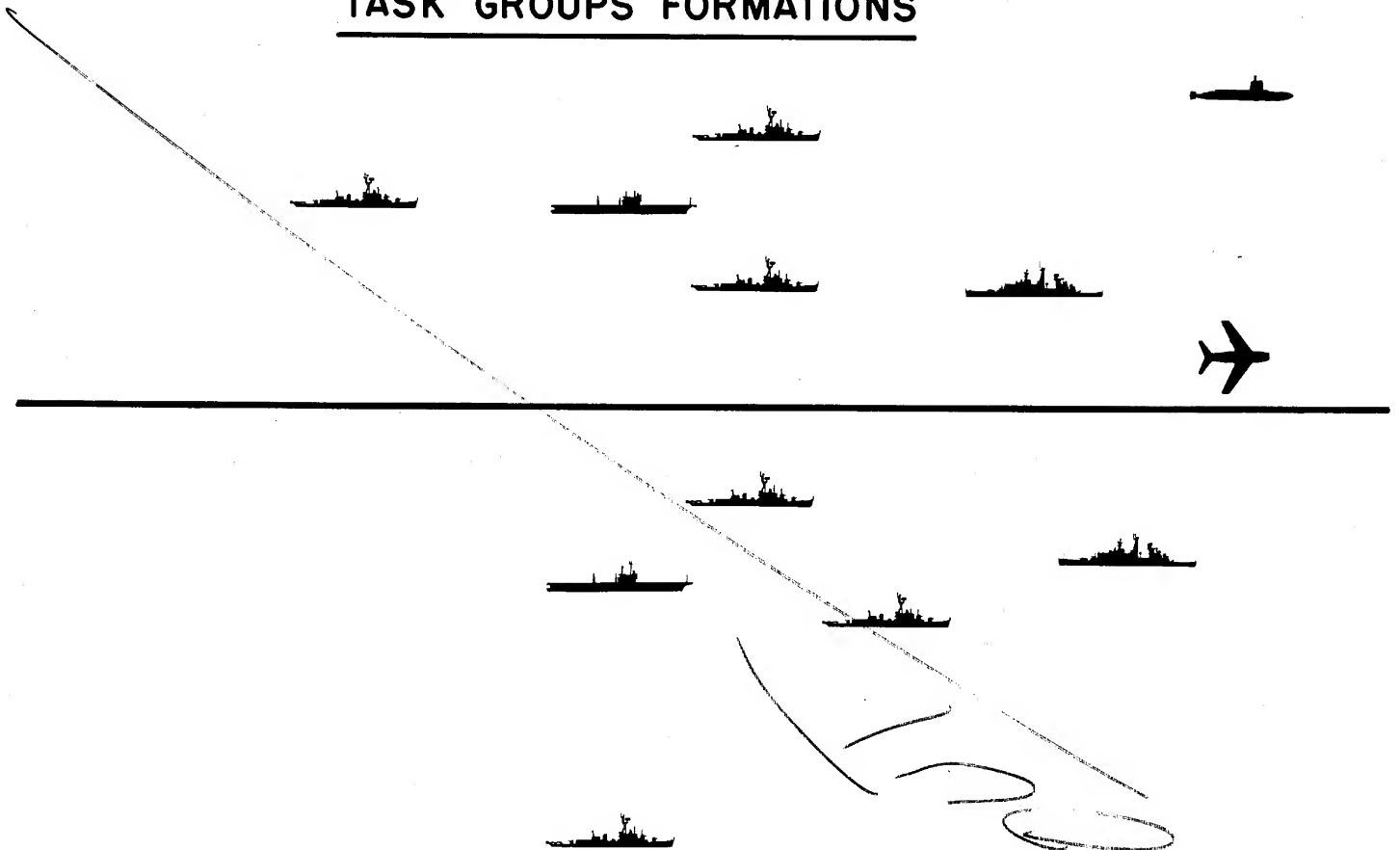
FUNDAMENTALS
LOGIC PROCESS

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SLIDE #11

TASK GROUPS FORMATIONS



SLIDE 2

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WHY STUDY OF TACTICS
IS
IMPORTANT AT WAR COLLEGE LEVEL

IMPACT ON MANAGEMENT DECISIONS

STANDARD PROCEDURES LESS USEFUL

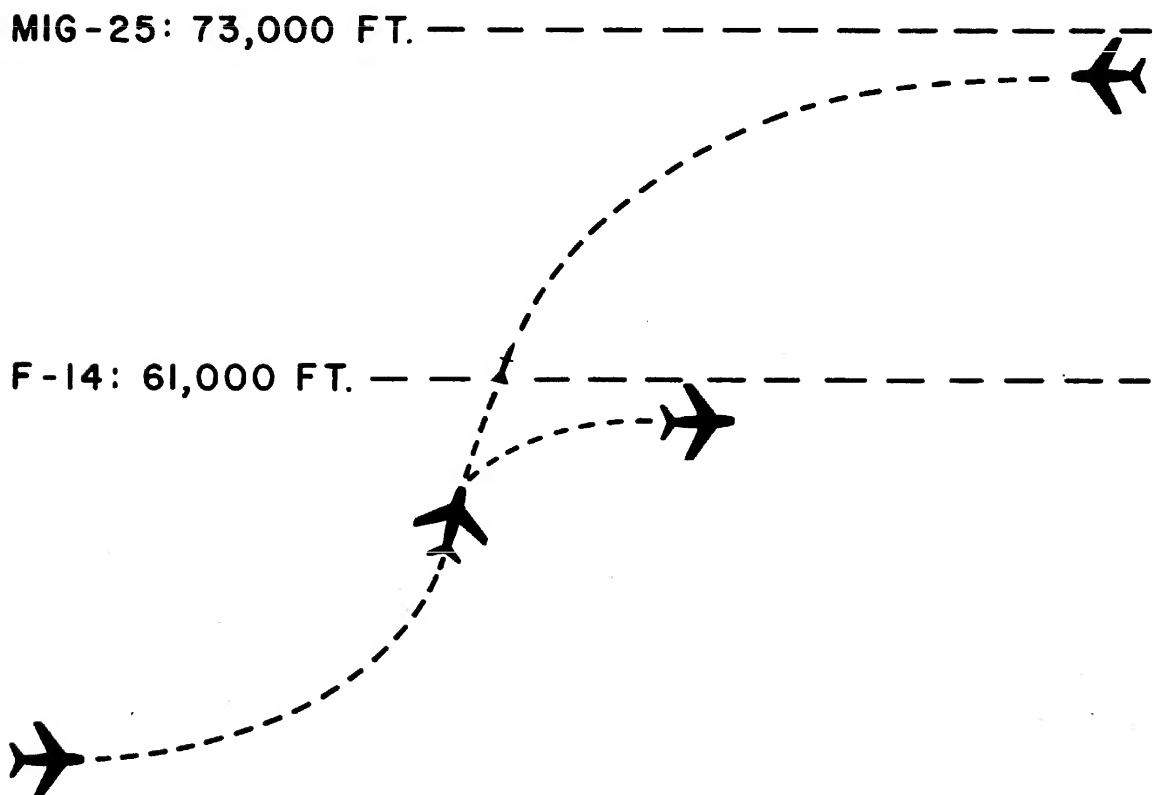
UNDUE FOCUS ON HARDWARE

LACK OF CAPABILITY TO DEVELOP TACTICS

COMPLEXITY OF NAVAL MISSIONS

BLACK SHOE - BROWN SHOE SYNDROME

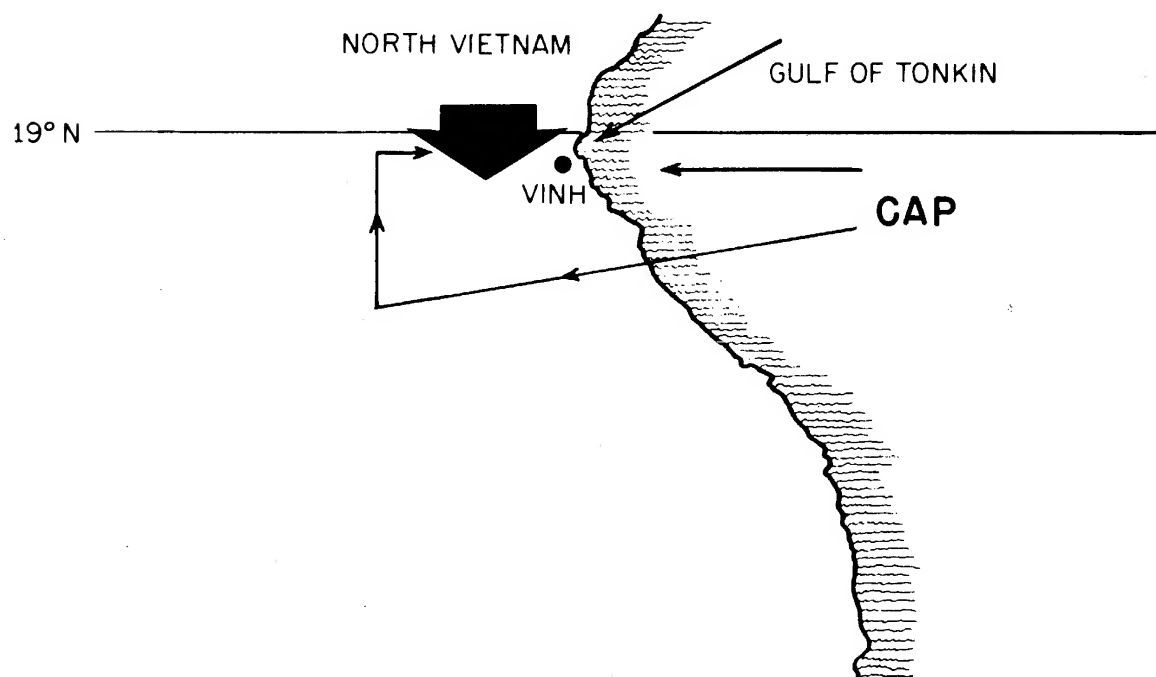
PROCLIVITY TO PREPARE FOR PAST



SECRET

GA73-90.20 4/3/73 VADM TURNER

POLITICAL RESTRAINTS ON TACTICS



SLIDE 14

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" ALL OF THE SERVICES, BUT IN PARTICULARLY THE NAVY, MUST MOVE INTO NEW WORLDS OF TECHNOLOGY & TACTICS IN ORDER TO BALANCE THE SOVIET UNIONS QUALITATIVE & QUANTITATIVE IMPROVEMENTS OF THE LAST FEW YEARS "

NEW YORK TIMES

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SLIDE #8

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THE WORLD OF TACTICS

DERIVATION

ANALYSIS OF PROBLEM
OBJECTIVES
CRITERIA
ALTERNATIVES
DECISION

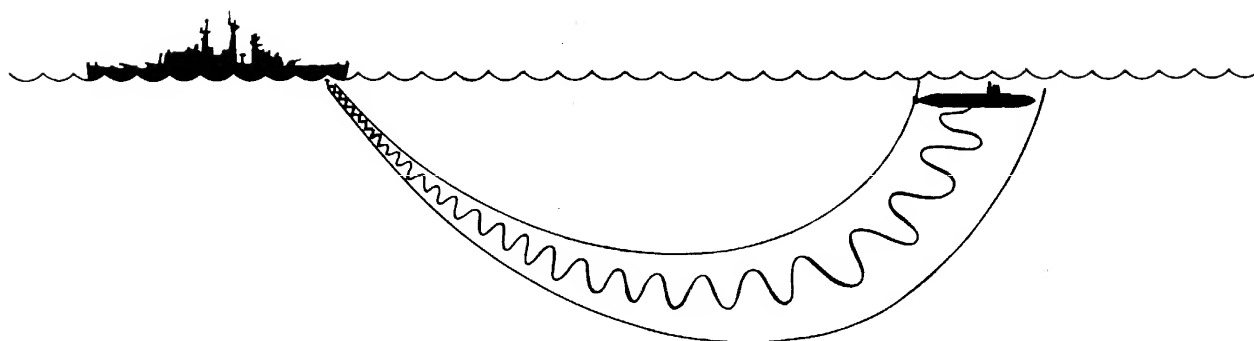
EXECUTION

DOCTRINE
ORGANIZATION
ORDERS / PLANS

LEADERSHIP

TRAINING

CONVERGENCE ZONE SONAR



GA73-90.6 4/2/73 ADM TURNER

SLIDE 13

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SEQUENCE OF ENGAGEMENT ACTIONS

DETECT - CLASSIFY

FIRE CONTROL SOLUTION

ATTACK

GA73-90.2

VADM TURNER

4/2/73

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Slide 15

ALTERNATIVE CONSEQUENCE DISPLAY

SUB VS SUB ENCOUNTER

